

AMENDATORY SECTION (Amending Order 94-07, filed 7/20/94, effective 9/20/94)

WAC 296-24-975 Selection and use of work practices. (1)

General. Safety-related work practices shall be employed to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts, when work is performed near or on equipment or circuits which are or may be energized. The specific safety-related work practices shall be consistent with the nature and extent of the associated electrical hazards.

(a) Deenergized parts. Live parts to which an employee may be exposed shall be deenergized before the employee works on or near them, unless the employer can demonstrate that deenergizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. Live parts that operate at less than 50 volts to ground need not be deenergized if there will be no increased exposure to electrical burns or to explosion due to electric arcs.

Note 1: Examples of increased or additional hazards include interruption of life support equipment, deactivation of emergency alarm systems, shutdown of hazardous location ventilation equipment, or removal of illumination for an area.

Note 2: Examples of work that may be performed on or near energized circuit parts because of infeasibility due to equipment design or operational limitations include testing of electric circuits that can only be performed with the circuit energized and work on circuits that form an integral part of a continuous industrial process in a chemical plant that would otherwise need to be completely shut down in order to permit work on one circuit or piece of equipment.

Note 3: Work on or near deenergized parts is covered by subsection (2) of this section.

(b) Energized parts. If the exposed live parts are not deenergized (i.e., for reasons of increased or additional hazards or infeasibility), other safety-related work practices shall be used to protect employees who may be exposed to the electrical hazards involved. Such work practices shall protect employees against contact with energized circuit parts directly with any part of their body or indirectly through some other conductive object. The work practices that are used shall be suitable for the conditions under which the work is to be performed and for the voltage level of the exposed electric conductors or circuit parts. Specific work practice requirements are detailed in WAC 296-24-960.

(2) Working on or near exposed deenergized parts.

(a) Application. This subsection applies to work on exposed deenergized parts or near enough to them to expose the employee to any electrical hazard they present. Conductors and parts of electric equipment that have been deenergized but have not been locked out or tagged according to this subsection shall be treated as energized parts, and WAC 296-24-960 applies to

work on or near them.

(b) Lockout and tagging. While any employee is exposed to contact with parts of fixed electric equipment or circuits which have been deenergized, the circuits energizing the parts shall be locked out or tagged or both according to the requirements of this section. The requirements shall be followed in the order in which they are presented (i.e., (b)(i) of this subsection first, then (b)(ii) of this subsection.

Note 1: As used in this section, fixed equipment refers to equipment fastened in place or connected by permanent wiring methods.

Note 2: Lockout and tagging procedures that comply with chapter ~~((296-24-WAC Part A-4))~~ 296-803 WAC, Lockout/tagout (control of hazardous energy) will also be deemed to comply with (b) of this subsection provided that:

1. The procedures address the electrical safety hazards covered by this part; and
2. The procedures also incorporate the requirements of (b)(iii)(D) and (b)(iv)(B) of this subsection.

(i) Procedures. The employer shall maintain a written copy of the procedures outlined in (b) of this subsection and shall make it available for inspection by employees and by the director and his or her authorized representatives.

Note: The written procedures may be in the form of a copy of subsection (2) of this section.

(ii) Deenergizing equipment.

(A) Safe procedures for deenergizing circuits and equipment shall be determined before circuits or equipment are deenergized.

(B) The circuits and equipment to be worked on shall be disconnected from all electric energy sources. Control circuit devices, such as push buttons, selector switches, and interlocks, shall not be used as the sole means for deenergizing circuits or equipment. Interlocks for electric equipment shall not be used as a substitute for lockout and tagging procedures.

(C) Stored electric energy which might endanger personnel shall be released. Capacitors shall be discharged and high capacitance elements shall be short-circuited and grounded, if the stored electric energy might endanger personnel.

Note: If the capacitors or associated equipment are handled in meeting this requirement, they shall be treated as energized.

(D) Stored nonelectrical energy in devices that could reenergize electric circuit parts shall be blocked or relieved to the extent that the circuit parts could not be accidentally energized by the device.

(iii) Application of locks and tags.

(A) A lock and a tag shall be placed on each disconnecting means used to deenergize circuits and equipment on which work is to be performed, except as provided in subitems (C) and (E) of this item. The lock shall be attached to prevent persons from operating the disconnecting means unless they resort to undue force or the use of tools.

(B) Each tag shall contain a statement prohibiting unauthorized operation of the disconnecting means and removal of

the tag.

(C) If a lock cannot be applied, or if the employer can demonstrate that tagging procedures will provide a level of safety equivalent to that obtained by the use of a lock, a tag may be used without a lock.

(D) A tag used without a lock, as permitted by subitem (C) of this item, shall be supplemented by at least one additional safety measure that provides a level of safety equivalent to that obtained by the use of a lock. Examples of additional safety measures include the removal of an isolating circuit element, blocking of a controlling switch, or opening of an extra disconnecting device.

(E) A lock may be placed without a tag only under the following conditions:

(I) Only one circuit or piece of equipment is deenergized; and

(II) The lockout period does not extend beyond the work shift; and

(III) Employees exposed to the hazards associated with reenergizing the circuit or equipment are familiar with this procedure.

(iv) Verification of deenergized condition. The requirements of this subsection shall be met before any circuits or equipment can be considered and worked as deenergized.

(A) A qualified person shall operate the equipment operating controls or otherwise verify that the equipment cannot be restarted.

(B) A qualified person shall use test equipment to test the circuit elements and electrical parts of equipment to which employees will be exposed and shall verify that the circuit elements and equipment parts are deenergized. The test shall also determine if any energized condition exists as a result of inadvertently induced voltage or unrelated voltage backfeed even though specific parts of the circuit have been deenergized and presumed to be safe. If the circuit to be tested is over 600 volts, nominal, the test equipment shall be checked for proper operation immediately before and immediately after this test.

(v) Reenergizing equipment. These requirements shall be met, in the order given, before circuits or equipment are reenergized, even temporarily.

(A) A qualified person shall conduct tests and visual inspections, as necessary, to verify that all tools, electrical jumpers, shorts, grounds, and other such devices have been removed, so that the circuits and equipment can be safely energized.

(B) Employees exposed to the hazards associated with reenergizing the circuit or equipment shall be warned to stay clear of circuits and equipment.

(C) Each lock and tag shall be removed by the employee who

applied it or under his or her direct supervision. However, if this employee is absent from the workplace, then the lock or tag may be removed by a qualified person designated to perform this task provided that:

(I) The employer ensures that the employee who applied the lock or tag is not available at the workplace; and

(II) The employer ensures that the employee is aware that the lock or tag has been removed before he or she resumes work at that workplace.

(D) There shall be a visual determination that all employees are clear of the circuits and equipment.